

REMARKS

Entry of the present amendment and reconsideration of this Application is respectfully requested. By the present communication, claims 18 and 24 have been amended to describe Applicants' invention with greater particularity, claims 20, 51-60, 62, 63, and 65-67 have been canceled without prejudice or disclaimer, and new claims 71-87 have been added. Accordingly, upon entry of the present Amendment, claims 18, 21-24, 48-50, 61, 64, and 68-87 will be pending in the application and under examination.

The amendments to claims 18 and 24 and the newly added claims are supported by the specification as filed. The amendment to claim 18 is supported, for example, by paragraph 0036, 0074, and 0075. The amendment to claim 24 clarifies the prior claim language. Newly added claim 71 is supported, for example, by paragraphs 0073-0076. Newly added claim 72 is supported, for example, by Figs. 1 and 5A. Newly added claim 73, 78, and 81 are supported, for example, by paragraphs 009, 0036, and FIG. 3. Newly added claim 74 is supported, for example, by paragraphs 0075-0076. Newly added claim 75 is supported, for example, by paragraphs 009, 0036, and 0075-0076. Newly added claims 76, 77, and 80 are supported, for example, by paragraphs 0074 – 0075. Newly added claim 79 and 82 are supported, for example, by paragraphs 009, 0036, and 0075-0076. Newly added claims 83 and 87 are supported, for example, by paragraphs 0012, 0073, 0074, and 0075. Newly added claim 84 is supported, for example, by paragraph 0072. Newly added claim 85 is supported, for example, by paragraph 0036. Newly added claim 86 is supported, for example, by paragraph 0019.

Based on the above amendments and the following remarks, Applicant respectfully requests that the Examiner reconsider all outstanding rejections and that they be withdrawn.

Claim Rejections under 35 U.S.C. § 112

Applicants respectfully traverse the rejection of claims 18, 21-24, 48-50, 55, and 60-70 under 35 U.S.C. § 112, second paragraph as allegedly being indefinite. Specifically, the Examiner alleges that the term "uncharacterized" renders the pending claims indefinite. Applicants respectfully submit that the Examiner's citation of claims 31 and 37, appears to be a typographical error. However, in order to reduce the issues and further prosecution of this application, the term "uncharacterized" has been removed from claim 18. Accordingly, Applicants respectfully request withdrawal of the rejection of claims 18, 21-24, 48-50, 55, and 60-70 under 35 U.S.C. § 112, second paragraph.

Claim Rejections under 35 U.S.C. §103(a)

Applicants respectfully traverse the rejection of claims 18, 21, 22, 55, and 64-67 under 35 U.S.C. §103(a) as allegedly being obvious over Couchman et al. (hereinafter "Couchman") in view of Kauvar. To establish a prima facie case of obviousness there must be some suggestion or motivation in the prior art to make the claimed invention, there must be a reasonable expectation of success, and the prior art reference must teach or suggest all of the claim limitations. MPEP § 2142; *In re Vaeck*, 947 F.2d 488, 20 USPQ2d, 1438 (Fed. Cir. 1991). The patent office has the burden of establishing a prima facie case of obviousness. *Id.* The reference teachings must be sufficient for one of ordinary skill in the relevant art having the reference before him to make the proposed substitution, combination, or other modification. *In re Linter*, 458 F.2d 1013, 1016, 173 USPQ 560, 562 (CCPA 1972). MPEP § 2143.01. There are three possible sources for a motivation to combine references: the nature of the problem to be solved, the teachings of the prior art, and the knowledge of persons of ordinary skill in the art." *In re Rouffet*, 149 F.3d 1350, 1357, 47 USPQ2d 1453, 1457-58 (Fed. Cir. 1998) (The combination of the references taught every element of the claimed invention, however without a motivation to

combine, a rejection based on a *prima facie* case of obvious was held improper.). The level of skill in the art cannot be relied upon to provide the suggestion to combine references. *Al-Site Corp. v. VSI Int'l Inc.*, 174 F.3d 1308, 50 USPQ2d 1161 (Fed. Cir. 1999).

Applicants respectfully submit that claims 18, 21, 22, 55, and 64-67 are nonobvious under the 35 U.S.C. §103(a) because the cited references do not teach all of the claimed limitations, there is no suggestion or motivation to combine the references, and the cited references do not provide a reasonable expectation of success. Neither of the cited references teach contacting an antibody array with a cell lysate as recited in the pending independent claim 18. Couchman discloses screening for cDNA clones using a single anti-phosphotyrosine antibody. Kauver teaches applying isolated mimotopes and isolated antigens to immobilized antibodies. Accordingly, the references taken alone or in combination do not teach contacting an antibody with a cell lysate, as recited in independent claim 18, from which the other rejected claims depend.

The cited references do not provide a motivation or suggestion to combine because of the fundamental differences in both the purposes of the methods and the specific steps in the methods. Couchman discloses screening for expression of phosphoproteins by bacterial clones containing cDNA libraries from endometrial specimens using a single anti-phosphotyrosine antibody that detects a plurality of phosphorylated proteins by immunoblotting, while Kauver discloses a method to identify and characterize a candidate drug. Furthermore, Kauver discloses a method that is technically fundamentally different than Couchman. For example, Couchman discloses immobilizing proteins and contacting the proteins with a single isolated antibody. Kauver's method, on the other hand, involves contacting immobilized antibodies with isolated antigen and mimotopes. Accordingly, Applicants submit that a skilled artisan would not be motivated to combine a method for identifying proteins expressed by bacterial clones of a cDNA library using immobilized proteins and a single antibody, with a method of performing a

competition assay for drug characterization using immobilized antibodies, isolated antigen, and a series of different mimotopes.

There is no reasonable expectation of success in using the teachings of Kauvar combined with Couchman to successfully perform the methods of the present invention. First, neither Couchman nor Kauver teach that microarrays of antibodies can be used successfully for expression profiling using cell lysates. Couchman probes bound, isolated proteins with a single isolated antibody. Couchman does not contact immobilized antibodies with a cell lysate. Kauver teaches screening immobilized antibodies with isolated antigens and calibrated mixtures of mimotopes. A skilled artisan will recognize that teachings related to applying isolated or separated proteins to a solid support having bound antibodies do not provide a reasonable expectation of success for the use of cell lysates on antibody arrays for protein detection. Second, neither Couchman nor Kauver teach methods that can be used to successfully make microarrays of antibodies. Couchman does not disclose arrays, as conceded in the Office Action. Kauvar only shows the creation of 96 spot arrays made using a manual spotting method and does not disclose methods that can be used to successfully produce microarrays of antibodies.

Accordingly, Applicants respectfully submit that the requirements of a 35 U.S.C. §103(a) rejection have not met for the rejected claims. Applicants therefore respectfully request withdrawal of the rejection of claims 18, 21, 22, 55, and 64-67 over Couchman et al. in view of Kauvar.

Applicants respectfully traverse the rejection of claims 23, 24, 48-50, and 70 under 35 U.S.C. §103(a) as allegedly being obvious over Couchman in view of Kauvar and further in view of Spencer et al. (hereinafter "Spencer"). As discussed above, Couchman in view of Kauvar does not render obvious claim 18, from which the rejected claim depends. Applicants respectfully submit that Spencer does not overcome the deficiencies identified in Couchman in view of Kauvar. Spencer discloses the production of a monoclonal antibody, a ligand bound by

the antibody, and methods using the monoclonal antibody and/or ligand for diagnosing inflammatory disorders. Spencer is absolutely silent with regard to antibody microarrays, or contacting antibody microarrays with cell lysates. Furthermore, Spencer does not provide any disclosure related to suggesting or motivating a skilled artisan to combine Couchman and Kauvar.

Accordingly, Applicants respectfully submit that the requirements of a 35 U.S.C. §103(a) rejection have not met for the rejected claims. Applicants therefore respectfully request withdrawal of the rejection of claims 23, 24, 48-50, and 70 over Couchman et al. in view of Kauvar and further in view of Spencer et al.

Applicants respectfully traverse the rejection of claims 60-63 and 69 under 35 U.S.C. §103(a) as allegedly being obvious over Couchman in view of Kauvar and further in view of Cupo. As discussed above, Couchman in view of Kauvar does not render obvious claim 18, from which the rejected claims depend. Applicants respectfully submit that Cupo does not overcome the deficiencies in Couchman in view of Kauvar. Cupo discloses a 2-dimensional electrophoresis system for analysis of nuclear matrix proteins. Cupo does not provide any teachings related to antibody microarrays, or contacting antibody microarrays with cell lysates. Furthermore, Cupo does not provide any teaching related to suggesting or motivating a skilled artisan to combine Couchman et al and Kauvar.

Accordingly, Applicants respectfully submit that the requirements of a 35 U.S.C. §103(a) rejection have not met for the rejected claims. Applicants therefore respectfully request withdrawal of the rejection of claims 23, 24, 48-50, and 70 over Couchman et al. in view of Kauvar and further in view of Cupo.

Applicants respectfully traverse the rejection of claim 68 under 35 U.S.C. §103(a) as allegedly being obvious over Couchman in view of Kauvar and further in view of Ganz et al. (hereinafter "Ganz"). As discussed above, Couchman in view of Kauvar does not render obvious

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claim 18, from which the rejected claim depends. Applicants respectfully submit that Ganz does not overcome the deficiencies in Couchman in view of Kauvar. Ganz characterizes plasminogen binding to human capillary and arterial endothelial cells by probing immobilized proteins with radiolabelled plasminogen. Ganz does not provide any teachings related to antibody microarrays, or contacting antibody microarrays with cell lysates. Furthermore, Ganz does not provide any teaching related to suggesting or motivating a skilled artisan to combine Couchman and Kauvar.

Accordingly, Applicants respectfully submit that the requirements of a 35 U.S.C. §103(a) rejection have not met for the rejected claims. Applicants therefore respectfully request withdrawal of the rejection of claims 60-63 and 69 over Couchman et al. in view of Kauvar and further in view of Cupo.

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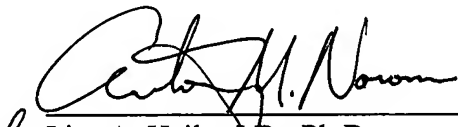
Conclusion

In summary, for the reasons set forth herein, Applicants submit that claims 18, 21-24, 48-50, 61, 64, and 68-87 clearly and patentably define the invention and respectfully request that the Examiner withdraw all rejections and pass the application to allowance. If the Examiner would like to discuss any of the issues raised in the Office Action, the Examiner is encouraged to call the undersigned so that a prompt disposition of this application can be achieved.

Check No. 581398 is enclosed in the amount of \$510.00 for the Petition for Extension of Time – Three-Month fee. The Commissioner is hereby authorized to charge any other fees that may be required by this paper or credit any overpayment to Deposit Account No. 07-1896 referencing the above-identified attorney docket number. A duplicate copy of the Transmittal Sheet is enclosed

Respectfully submitted,

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